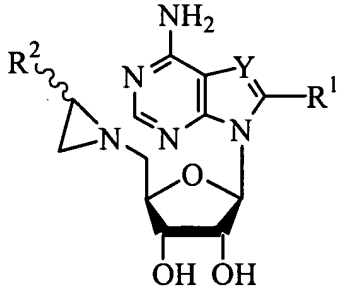
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-43. Canceled.

44. (Previously Presented) A compound of formula (I):



(I)

wherein:

Y is N or $-CR^3$;

R^1 is H, ^3H, $-NH(CH_2)_nNHR^4$ or $-NH(C_2H_5O)_nC_2H_5NHR^4$;

R^3 is H, ^3H, $-NH(CH_2)_nNHR^4$ or $-NH(C_2H_5O)_nC_2H_5NHR^4$;

R^2 is H, ^3H, or $-CH_2CH(COOH)(NH_2)$;

R^4 is fluorophores, affinity tags, crosslinking agents, chromophors, proteins, peptides, amino acids, nucleotides, nucleosides, nucleic acids, carbohydrates, lipids, PEG, transfection reagents, beads or intercalating agents; and

n is an integer from 1 to 250,

provided, when R^1 is $-NH(CH_2)_nNHR^4$ or $-NH(C_2H_5O)_nC_2H_5NHR^4$, Y is N or CH; and when R^3 is $-NH(CH_2)_nNHR^4$ or $-NH(C_2H_5O)_nC_2H_5NHR^4$, R^1 is H.

45. (Previously Presented) The compound of claim 44 where Y is N.

46. (Previously Presented) The compound of claim 45 where R^1 is $-NH(CH_2)_nNHR^4$ and R^2 is hydrogen.

47. (Previously Presented) The compound of claim 46 wherein n is 1-20.

48. (Previously Presented) The compound of claim 47 wherein R^4 is selected from flourophores, affinity tags, crosslinking agents and chromophors.

49. (Previously Presented) The compound of claim 48 wherein the fluorophore is BODIPY, coumarin, dansyl, florescein, mansyl, pyrene, rhodamines, Texas red, TNS, the cyanine fluorophores Cy2, Cy3, Cy3.5, Cy5, Cy5.5 and Cy7.

50. (Previously Presented) The compound of claim 49 wherein the fluorophore is dansyl.

51. (Previously Presented) The compound of claim 50 wherein n is 4.

52. (Previously Presented) The compound of claim 45 wherein R^1 and R^2 are each hydrogen.

53. (Previously Presented) The compound of claim 45 wherein R^1 is hydrogen and R^2 is $-CH_2CH(COOH)(NH_2)$.

54. (Previously Presented) The compound of claim 44 wherein Y is CR^3 and R^1 is hydrogen.

55. (Previously Presented) The compound of claim 54 where R^3 and R^2 are each hydrogen.

56. (Previously Presented) The compound of claim 54 wherein R^3 is hydrogen and R^2 is $-CH_2CH(COOH)(NH_2)$.

57. (Previously Presented) The compound of claim 54 wherein R^3 is $-NH(CH_2)_nNHR^4$ and R^2 is hydrogen.

58. (Previously Presented) The compound of claim 57 wherein n is 1-20.

59. (Previously Presented) The compound of claim 58 wherein R^4 is selected from flourophores, affinity tags, crosslinking agents and chromophors.

60. (Previously Presented) The compound of claim 59 wherein the fluorophore is BODIPY, coumarin, dansyl, florescein, mansyl, pyrene, rhodamines, Texas red, TNS, the cyanine fluorophores Cy2, Cy3, Cy3.5, Cy5, Cy5.5, and Cy7.

61. (Previously Presented) The compound of claim 60 wherein the fluorophore is dansyl.

62. (Previously Presented) The compound of claim 61 wherein n is 4.

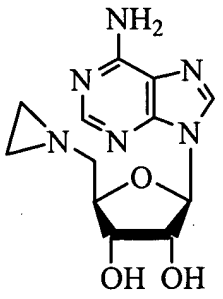
63. (Previously Presented) The compound of claim 48 or claim 59 wherein the affinity tag is a peptide tag, biotin, digoxigenin or dinitrophenol.

64. (Previously Presented) The compound of claim 63 wherein the peptide tag is his-tag, or a tag having metal chelating capability that can be used in IMAC, strep-tag, flag-tag, c-myc-tag, epitopes or gultathinone.

65. (Previously Presented) The compound of claim 48 or claim 59 wherein the crosslinking agent is maleimide, iodoacetamide or a photo crosslinking agent.

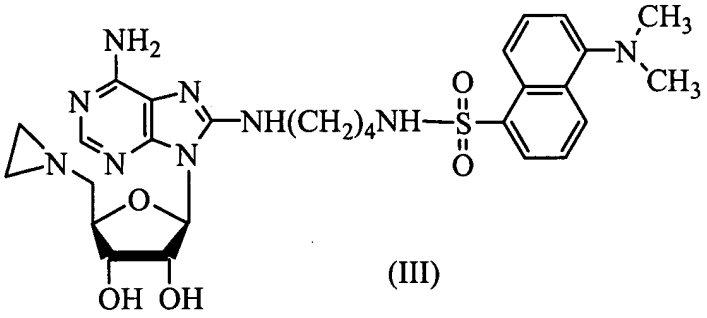
66. (Previously Presented) The compound of claim 65 wherein the photo crosslinking agent is arylazide, a diazo compound or a benzophenone compound.

67. (Previously Presented) A compound of Formula (II):



(II)

68. (Previously Presented) A compound of Formula (III):



(III)

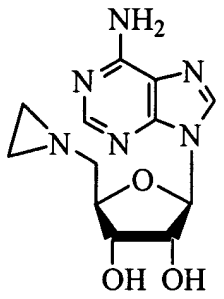
69. (Previously Presented) A complex comprising a compound of claim 1 and a methyltransferase capable of using S-adenosyl-L-methionine (SAM) as a cofactor.

70. (Previously Presented) The complex of claim 69 wherein the methyltransferase targets a target molecule selected from the group consisting of a nucleic acid, a polypeptide, a protein, an enzyme and a small molecule.

71. (Previously Presented) The complex of claim 70 wherein the nucleic acid is a DNA or an RNA.

72. (Previously Presented) The complex of claim 71 wherein the DNA is M.Taq1 or M. Hha1.

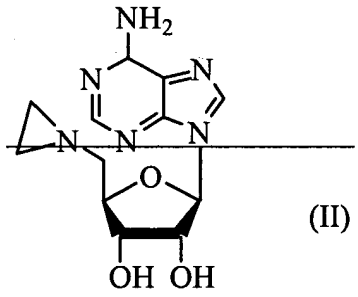
73. (Previously Presented) The complex of claim 72 comprising a compound of Formula (II):



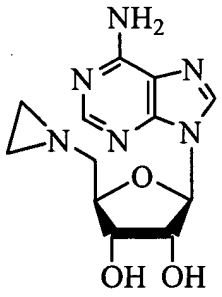
(II)

and M.Taq1.

74. (Currently Amended) The complex of claim 72 comprising a compound of Formula (II):



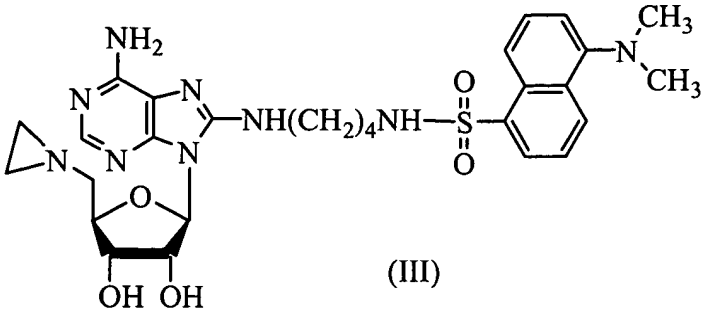
(II)



(II)

and M.Hhal.

75. (Previously Presented) The complex of claim 72 comprising a compound of Formula (III):



(III)

and M.Taq1.

76. (Previously Presented) The complex of claim 69 wherein the methyltransferase is part of a restriction modification system of a bacterium.

77. (Previously Presented) The complex of claim 69, wherein the methyltransferase methylates proteins at distinct amino acids.

78. (Previously Presented) A kit comprising a compound of claim 1.

79. (Previously Presented) A kit comprising a complex of claim 69.

80. (Previously Presented) A pharmaceutical composition comprising a compound of claim 1 or a complex of claim 69.

81. (Previously Presented) A diagnostic composition comprising a compound of claim 1 or a complex of claim 69.

82. (Previously Presented) A method for modifying a target molecule comprising the following steps:

providing a compound of claim 1;

providing a methyltransferase capable of using S-adenosyl-L-methionine (SAM) as a co-factor;

providing a target molecule, the target molecule being a suitable substrate of the methyltransferase; and

contacting the target molecule with the compound in the presence of the methyltransferase such that the target molecule is modified by the compound.

83. (Previously Presented) The method of claim 82, wherein the modification of the target molecule is achieved by using the compound as a cofactor of the methyltransferase which transfers the compound or part of the compound onto the target molecule.

84. (Previously Presented) The method of claim 82, wherein the target molecule is a nucleic acid molecule, a polypeptide, a synthetic polymer or a small molecule.

85. (Previously Presented) The method of claim 84, wherein the nucleic acid molecule is DNA, RNA or a hybrid thereof.

86. (Previously Presented) The method of claim 84, wherein the small molecule is a lipid.

87. (Previously Presented) The method of claim 84, wherein the polypeptide is a protein or a fusion protein comprising a methylation site.

88. (Previously Presented) A method for the preparation of a modified target molecule comprising the following steps:

providing a compound of claim 1;

providing a methyltransferase capable of using S-adenosyl-L-methionine (SAM) as a co-factor;

providing a target molecule, the target molecule being a suitable substrate of the methyltransferase; and

incubating the target molecule with the compound in the presence of the methyltransferase under conditions which allow the transfer of the compound or part of it onto the target molecule.

89. (Previously Presented) The method of claim 88, wherein the target molecule comprises a nucleic acid molecule, a DNA, an RNA, an RNA/DNA hybrid, a polypeptide, a fusion protein, a synthetic polymer, a small molecule or a lipid.

90. (Previously Presented) A compound prepared by the method of claim 88.